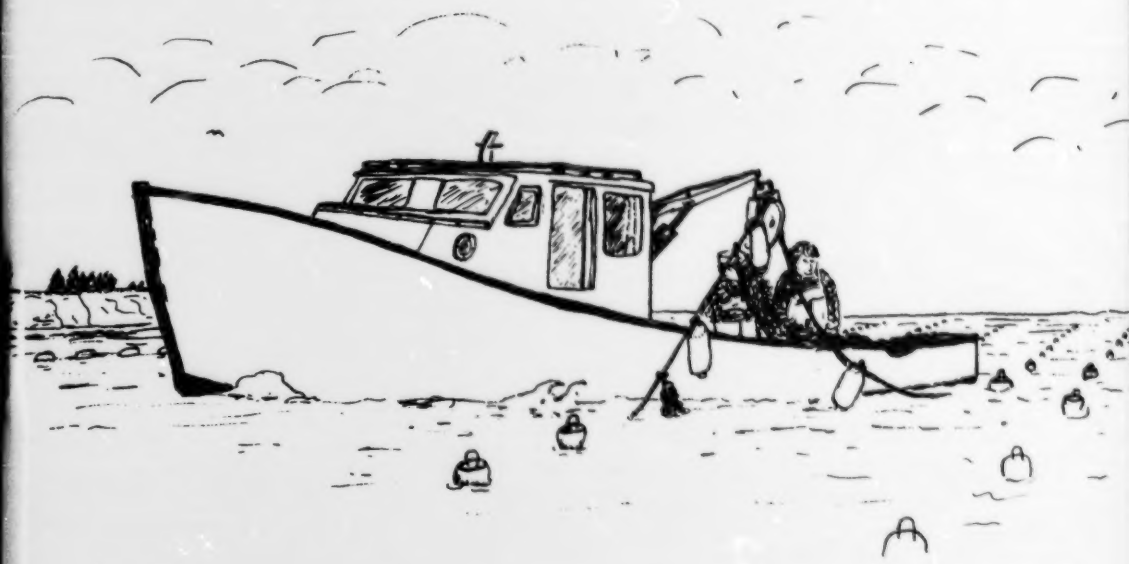
Annual Report

Department of Fisheries

Prince Edward Island

for year ending December 31st

1988



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TO HIS HONOUR

THE HONOURABLE LLOYD MACPHAIL,

Lieutenant Governor of the Province of Prince Edward Island

May It Please Your Honour:

I have the honour to submit herewith the Report of the Department of Fisheries for the period ended December 31, 1988.

I have the honour to be, Sir.

Your obedient servant,

HONOURABLE JOHNNY ROSS YOUNG,
Minister

TO THE HONOURABLE JOHNNY ROSS YOUNG
MINISTER OF FISHERIES
Charlottetown, P.E.I.

Sir:

I have the honour to submit herewith the Report of the Prince Edward Island Department of Fisheries for the period ended December 31, 1988.

Respectfully submitted,

H. Douglas Johnston,
Deputy Minister

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COVER PHOTO: HARVESTING P.E.I. CULTURED MUSSELS
GRAPHIC BY BAXTER RAMSAY

FOREWORD

ANNUAL REPORT

1988 marked another year of overall success in the P.E.I. fishery, with total landings increased by approximately 2% and the total landed value reaching a record figure of $77.4 million. Once again the excellent performance of the lobster fishery accounted for overall increases in the fishery with 1988 marking the eighth time in the past ten years that record catches and landed value have been achieved in this sector. Lobster landings in 1988 reached 22.3 million pounds valued at $56.1 million, an amazing 18.6% increase over the record landings of 1987 and an increase in value of 13.3%.

Despite the success of the lobster fishery and the stability of many other sectors of the P.E.I. fishery, the past year was certainly not without its share of problems and concerns. As the year began, the mussel industry was closed down due to the presence of a toxin in P.E.I. mussels, identified as domoic acid. The toxin was detected in November of 1987 and resulted in the closure of mussel harvesting until late February of 1988. The toxin was found to be a naturally occurring phenomenon associated with the marine diatom, Nitzschia pungens, and after ice cover occurred, both the Nitzschia and the toxin in the mussels dissipated.

The unfortunate incident which led to the discovery of the toxin in late 1987, has resulted in the Department of Fisheries and Oceans, in cooperation with Health and Welfare Canada, establishing minimum acceptable levels and a stringent testing mechanism to ensure no toxic product reaches the marketplace. As well, extensive research on the problem continues to be carried out on many fronts and the knowledge gained by this experience should prove positive in assisting a developing industry such as mussel culture. To the credit of that industry, production and sales were up substantially over 1987 levels, despite the problems encountered.

The past year has also seen a dramatic change in groundfish market conditions. During the three years prior to 1988, the groundfish market was vibrant and the strong demand led to good returns for fisherman and processors. The trend was reversed in 1988, the market softened, inventories rose and returns were down sharply. The situation improved slightly late in the year and indications are a gradual improvement in groundfish market conditions will occur in 1989.

The importance of the fishing industry to P.E.I. is apparent when you consider the Province must rely on its resource industries of agriculture, fisheries and tourism and does not possess alternatives such as minerals or heavy industry, as is the

case in other Provinces. The fishery on P.E.I. accounts for approximately 10% of employment and makes a total annual contribution to the economy estimated at $200 million when fishing, processing and service industries are taken into account.

Due to the importance of the fishery and the need to sustain and develop this industry for the benefit of the Province, the Department has identified opportunities for development of the fishery and have been focusing on activities over the past two years to realize these opportunities. The identified opportunities are diversification of resources, quality improvement, aquaculture, value added processing and marketing, with the underlying theme being one of diversification in both catching and processing. The continued predominance of the lobster fishery in 1988, illustrates that the theme of diversification is still valid since any down turn in the lobster fishery must be offset by other sectors to avoid substantial negative impacts.

Progress has been made in reaching the goals that have been set out and as the fishery looks to the future, there are both constraints to be overcome and very positive signals for achieving development.

Erosion of access by P.E.I. fishermen to traditional fishing grounds is still a major concern. In 1988, the Herring Management Plan adopted by D.F.O., once again restricted the mobility fishermen in Eastern Northumberland Strait have enjoyed for years and fishermen engaged in the snow crab fishery have continued experiencing problems in obtaining equitable access to the Gulf fishery which they helped to pioneer.

The P.E.I. share of overall Atlantic groundfish landings has dropped in recent years from 3% in 1981 to 1.8% in 1987 and current plans by the Department of Fisheries and Oceans to introduce an Enterprise Allocation program in 1989 for vessels 50 - 65 ft. engaged in the mobile groundfish fishery is worrisome. This system will provide an individual boat quota to vessels in that fleet sector in the Southern Gulf. A similar management system has been in place in the Northern Gulf for the past three years, on a pilot project basis and enforcement problems relating to mis-reporting of catches and high grading are reported to be widespread. Therefore, the effect of such a program on the health of Gulf stocks and the fact that quotas will be locked in for all vessels over 50 ft. is a major concern to P.E.I.'s predominantly small boat fishery.

On a more positive note in the groundfish fishery, the Department's new initiative to assist inshore groundfish fishermen to modernize technology has been well received by fishermen. It is also encouraging to see the major fleet upgrading program being undertaken by Usen Fisheries Ltd. The addition of three modern 127 ft. vessels to their fleet will upgrade the company's

fleet to harvest their groundfish allocations including the 5,000 M.T. allocation of redfish formerly reserved for Georgetown Seafoods, which the Usen Company had allocated to them last year. This quota is projected to create an additional 120 jobs in processing.

The aquaculture sector represents a viable opportunity to develop the P.E.I. fishery and represents an area which can provide good returns on investment. This past year has demonstrated that the inspection system employed in response to the domoic acid problem can ensure consumer confidence in mussels and projections for 1989 are for a significant increase in production. The salmonid sector is growing with many of the small scale production operations and our certified hatcheries increasing production. The large scale land based rearing facility at Georgetown encountered financial problems in late 1988, however, it is hoped that the operation can become a viable entity in the fishery once those problems are resolved. The Department, in cooperation with D.F.O. and the Trout Growers Association, commissioned a study to assist in preparation of a Salmonid Development Strategy for P.E.I. The study will be completed early in 1989 and will be used by both government and industry as a guide in formulating a strategy for the orderly development of the salmonid culture industry in P.E.I.

The investment by the Department in the Shellfish Enhancement Program for the oyster fishery, over the past two years, has resulted in the addition of millions of seed oysters to the public fishery which will substantially increase returns when they reach market size over the next 2 - 3 years. The initiation of a quahaug culture program and assistance in the provision of a soft-shell clam depuration facility were other notable achievements in the aquaculture sector during the past year.

The P.E.I. fishing industry, in cooperation with both levels of government, have demonstrated the effectiveness of efforts to improve the consistency of groundfish quality. There are opportunities to apply similar concepts to species such as herring, mackerel or lobster, and to assist the processing sector in responding to quality control concerns. Similarly, the potential for increasing economic returns through increased production of value added products affords a realistic development opportunity for the fishery. While advances have been made in diversifying the production capabilities of processing plants, much remains to be done to capitalize on consumer trends in the industry toward convenience products.

The Department remains confident that the course of action incorporating the overall theme of diversification is sound and will continue to pursue initiatives to develop the fishery. To strengthen the capability of the Department to respond to

development opportunities and represent the industry in resource management, an economist and a marine biologist have been added to our staff.

The efforts of the Department to develop the fishery and to represent the interests of the industry in an Atlantic Canadian context can only be effective with the continued cooperation and assistance of fishermen and processors. I continue to be impressed with the dedication and expertise displayed by our fishermen and processors and I sincerely thank them for their assistance and encouragement during the past year.

I am extremely grateful, as well, for the efforts of our experienced staff in the Department whose dedication and professionalism in serving the fishery are exemplary. I want to express my appreciation to Minister Young whose commitment to the betterment of the Island fishery and whose personal support have been of great assistance to both myself and staff in carrying out our duties.

H. Douglas Johnston
Deputy Minister

DEPARTMENT OF FISHERIES

ADMINISTRATION

The approved budget for the Department of Fisheries for the fiscal year, April 1, 1987 to March 31, 1988 was $2,622,000. Total expenditures were $2,598,141.36

Total Revenue for the 1987-1988 fiscal year was $155,989.

The programs of the Department were carried out by sixteen full time staff during 1987.

A detailed expenditure report of the department for fiscal year 1987/88 follows:

REPORT OF DEPARTMENT EXPENDITURES
April 1, 1987- March 31, 1988

Expenditures	Original Estimate	Actual Expenditure
FISHERIES ADMINISTRATION		
Administration	35,300	41,964.40
Equipment	2,000	6,911.13
Materials/Supplies	4,500	4,424.77
Professional Services	46,900	24,573.86
Salaries	226,700	232,216.43
Travel	28,400	22,599.91
TOTAL	343,800	332,690.50
EXTENSION		
Administration	1,000	590.29
Materials/Supplies	163,800	144,007.42
Professional Services	33,100	32,662.02
Salaries	95,100	92,378.13
Travel	20,100	21,247.07
P.E.I. Fishermen's Ass'n.	30,000	30,000.00
P.E.I. Seafood Processors	9,900	9,900.00
Travel Grant for Fishermen	5,600	6,784.06
Baitshed Program	18,000	16,484.79
Fishermen's Quality Enhancement	265,000	407,280.87
TOTAL	641,600	761,334.65
RESOURCE UTILIZATION AND MARKETING		
Equipment		47,842.32
Materials/Supplies	50,800	5,198.04
Professional Servs.	5,200	170,402.39
Salaries	185,400	37,520.29
Travel	25,400	
Fresh Fish Market Assistance	45,000	45,157.50
Product Utilization	80,000	44,313.00
TOTAL	391,800	350,433.54

Expenditures	Original Estimate	Actual Expenditure
PROCESSING & QUALITY		
Equipment	2,000	1,155.00
Materials/Supplies	32,400	6,144.44
Professional Services	47,600	23,719.35
Salaries	89,300	93,734.73
Travel	17,000	15,379.15
Processors Fish Quality Dev't Program	150,000	119,250.65
TOTAL	338,300	259,383.32
AQUACULTURE		
Equipment	2,500	2,489.76
Materials/Supplies	10,500	12,976.55
Professional Services	5,000	2,137.80
Salaries	161,200	170,872.06
Travel	28,800	29,539.65
Malpeque Oyster Cultures Inc.	1,300	1,458.94
Aquaculture Incentive Program	15,000	11,023.60
Prince Co. Shellfish Assoc.	70,000	70,000.00
Mussel Production Expansion Incentive	25,000	20,322.79
Trout Production Expansion Incentive	25,000	12,729.85
TOTAL	344,300	333,551.00
FINANCIAL SERVICES		
Administration	1,000	659.50
Salaries	48,600	48,607.60
Travel	4,100	2,535.51
Commercial Fishermen's Investment Incentive	199,000	203,728.55
Near Shore Vessels	175,000	214,004.00
Diesel Engine Conv.	62,500	41,889.94
Fishermen's Capital Investment Fund	60,000	1,050.00
Seaweed Market Stabilization	50,000	48,273.25
TOTAL	600,200	560,748.35
GRAND TOTALS	**2,660,000**	**2,598,141.36**

REVENUE

April 1, 1987 - March 31, 1988

FISHERIES ADMINISTRATION		
Miscellaneous	126.00	$ 126.00
EXTENSION		
Miscellaneous	486.00	$ 486.00
PRODUCTION/MARKETING		
Recoveries - Forgiveable Loans	9,276.95	
Miscellaneous	29.00	$ 9,305.95
PROCESSING/QUALITY		
Miscellaneous	6,729.05	
Miscellaneous (Seaweed Market Stabilization)	$134,920.24	$141,649.29
AQUACULTURE		
Aquaculture Incentive Grant	4,253.71	
Miscellaneous	168.00	$ 4,421.71
TOTAL DEPARTMENT REVENUE		**$155,988.95**

PRINCE EDWARD ISLAND FISHERIES

The year 1988 has seen overall landings increase by 2,420,897 lbs. compared to the 1987 recorded figures. Preliminary figures show 1988 landings of 125,190,607 lbs. The total landed value of all fishery products reached $77.4 million, an increase of 6.1% over the 1987 value.

The industry presently employs 6,100 people; approximately 3,700 in fishing and 2,400 in processing. Many more are employed in industries which support the fishery such as outfitting and vessel construction. It is estimated that in excess of $200 million is contributed annually to the P.E.I. economy from the primary and secondary fisheries sectors and support industries.

Total groundfish landings in 1988 increased to 30.4 million lbs. representing a 7.1% increase from 1987. The value, however, decreased by 38.5%, lowering the value to $4.6 million. With respect to the dominant groundfish species, an increase has been recorded in redfish, while decreases have occurred in landings of hake, and flatfish. Redfish landings increased by 60.0% raising the landings from 7.9 million lbs. in 1987 to 12.6 million lbs. in 1988. Landings of all flatfish, including greysole, yellowtails, blackbacks and flounder have decreased by 26.5% while the value decreased by 47.7%. Hake landings showed a decline of 1,331,336 lbs. or 28.9%. The total value decreased by 76.3%.

Landings of all pelagic and estuarial fish decreased to 28.5 million pounds, down from 34 million pounds in 1987, representing a decrease of 16.1%. The value of these landings decreased by 13.7% to $4.2 million. Mackerel and herring landings decreased by 39.5% and 8.3% respectively. Their values also decreased by 39.5% and 25% respectively. Eel landings decreased from 371,006 lbs. in 1987 to 337,936 lbs. in 1988. The value of these landings decreased by 15%, lowering the value to $473 thousand. Smelt landings increased by .4% while their value decreased by 33.1%. Silverside landings decreased from 276,974 lbs. to 172,554 lbs. Tuna landings increased by 158% with a recorded landing of 137,431 lbs.

Total mollusc and crustacean landings increased by 11.1% rising from 29.8 million lbs. in 1987 to 33.1 million lbs. in 1988. The value of these landings increased by 12.9% from $58.4 million in 1987 to $65.9 million in 1988. The lobster fishery, once again, showed improvement this year with an increase in landings of 18.6% and an increase of 13.3% in value to reach a record of $56.1 million. Bar clam and quahaug landings showed decreases of 8.5% and 87.3% respectively. Rock crab landings increased from 967,063 in 1987 to 1,341,629 lbs. in 1988. Oyster and snow crab landings increased this year by 1.1% and 8.9%

respectively. The value of oysters in 1988, rose to $3.0 million, and the value of snow crab increased from $1.4 million in 1987 to $1.5 million in 1988.

Seaplant landings increased by 2.6 million pounds to 33.1 million lbs. for 1988 with an increase in value of 22.7% giving a total value of $2.6 million.

The landed weight and value for fish and seaplants in P.E.I. in 1988 with comparative figures for 1987 are as follows:

P.E.I. FISH LANDINGS AND VALUES
1987-1988

SPECIES	1987		1988*	
Groundfish	**Pounds**	**Value $000**	**Pounds**	**Value $000**
Cod	8,351,110	$2,505.3	8,514,542	$1,277.1
Hake	4,614,547	1,384.4	3,283,211	328.3
Flounder	3,684,161	1,842.1	2,641,604	925.0
Blackback	1,362,978	681.5	1,143,308	400.2
Greysole	20,252	12.2	15,077	10.0
Yellowtail	184,038	46.0	58,935	15.0
Redfish	7,864,466	943.7	12,580,321	1,635.4
Halibut	13,364	10.7	2,093	4.0
Haddock	2,215	1.1	198	-
Pollock	221,491	55.4	7,400	1.0
Tomcod	48,029	9.6	28,482	6.0
Fishmeal	1,997,756	20.0	2,102,656	21.0
Catfish	1,127	-	-	-
TOTAL	**28,365,534**	**$7,512.0**	**30,377,827**	**$4,623.0**
Pelagic				
Tuna	53,269	$ 239.7	137,431	$ 807.0
Mackerel	9,132,397	1,095.9	5,524,421	662.9
Herring	23,106,736	2,541.7	21,183,050	1,906.5
Gaspereaux	730,078	109.5	500,132	100.0
Eel	371,006	556.5	337,936	473.1
Smelt	630,821	283.9	633,460	190.0
Silverside	276,974	55.4	172,554	34.5
Salmon	7,600	27.7	836	2.5
Trout	20,000	47.0	30,000	67.5
Animal Feed	43,391	4.3	850	-
TOTAL	**33,988,143**	**$4,915.6**	**28,520,670**	**$4,244.0**

SPECIES	1987		1988*	
Shellfish	**Pounds**	**Value**	**Pounds**	**Value**
Lobster	18,867,512	$49,532.0	22,372,029	$56,128.9
Bar Clam	1,005,122	261.3	919,994	276.0
S.S. Clam	897,975	673.5	470,023	376.0
Quahaug	1,235,903	1,112.3	156,475	125.2
Scallop	245,547	1,350.5	261,400	1,307.0
Mussel	2,282,452	1,711.8	3,147,170	2,360.4
Oyster	2,968,453	2,226.3	3,000,000	2,700.0
Snow Crab**	1,359,556**	1,359.6	1,481,213	2,407.0
Rock Crab	967,063	193.4	1,341,629	268.3
TOTAL	**29,829,583**	**$58,420.8**	**33,149,933**	**$65,948.8**
TOTAL FISH	**92,183,260**	**$70,848.4**	**92,048,430**	**$74,815.8**
MARINE PLANTS	**30,586,450**	**$ 2,141.0**	**33,142,177**	**$ 2,628.0**
TOTAL FISHERY PRODUCTS	**122,769,710**	**$72,989.4**	**125,190,607**	**$77,443.8**

* Preliminary

** Includes landings by N.B. vessels (P.E.I. Total 1.28 million lbs. in 1987)

DEPARTMENT OF FISHERIES

The following table shows the comparisons for P.E.I.'s landings and values, by species groups, over the period 1970 - 1988.

PRINCE EDWARD ISLAND, 1970-1988
Landings, Quantity and Values by Species Group
(In thousands of lbs. and thousands of dollars)

		Groundfish	Pelagic & Estuarial	Molluscs & Crustaceans	Marine Plants	Seafish Total Excluding Marine Plants	Total
1970	Q.	33,668	54,853	11,837	67,004	100,358	Q.167,360
	V.	1,353	928	7,298	1,558	9,579	V. 11,167
1971	Q.	39,440	47,012	11,047	50,764	97,499	Q.148,263
	V.	1,635	968	6,822	937	9,425	V. 10,361
1972	Q.	37,650	9,711	9,226	30,028	56,587	Q. 86,615
	V.	1,693	522	7,293	581	9,508	V. 10,089
1973	Q.	38,510	14,014	10,325	49,123	62,850	Q.111,973
	V.	2,132	899	8,209	1,172	11,241	V. 12,414
1974	Q.	17,083	9,667	8,830	76,036	35,661	Q.111,617
	V.	1,087	788	6,995	3,106	8,870	V. 11,977
1975	Q.	15,032	5,529	11,352	40,318	31,914	Q. 72,232
	V.	1,058	670	9,078	1,610	10,806	V. 12,416
1976	Q.	14,972	6,998	11,263	28,843	33,233	Q. 62,075
	V.	1,091	1,077	9,673	878	11,841	V. 12,719
1977	Q.	22,454	5,548	11,849	30,116	39,851	Q. 69,967
	V.	2,137	1,156	10,786	1,085	14,078	V. 15,164
1978	Q.	28,248	8,850	15,307	31,709	52,905	Q. 84,614
	V.	3,154	1,605	17,928	1,873	22,697	V. 24,560
1979	Q.	33,995	10,581	16,716	42,943	61,273	Q.104,216
	V.	4,300	1,898	20,259	2,689	26,457	V. 29,146
1980	Q.	42,252	1,238	16,475	35,225	70,966	Q.106,191
	V.	4,672	2,302	18,037	1,781	25,011	V. 26,792
1981	Q.	45,144	14,035	17,568	37,485	76,747	Q.114,231
	V.	5,413	2,309	22,258	1,874	29,982	V. 31,856
1982	Q.	42,223	18,046	18,672	34,043	78,942	Q.112,986
	V.	4,823	2,524	26,379	1,702	33,726	V. 35,428
1983	Q.	45,039	20,736	21,955	28,709	87,730	Q.116,439
	V.	4,883	3,539	34,365	1,435	42,787	V. 44,222
1984	Q.	41,646	15,581	21,579	34,724	78,806	Q.113,585
	V.	4,461	3,262	28,323	1,736	36,046	V. 37,821
1985	Q.	34,247	20,280	26,580	38,402	81,107	Q.119,509
	V.	4,823	3,639	40,905	2,496	49,366	V. 51,863
1986	Q.	30,116	33,880	31,435	27,785	95,431	Q.123,216
	V.	5,587	4,812	54,999	1,806	65,398	V. 67,204
1987	Q.	28,366	33,988	29,830	30,586	92,183	Q.122,770
	V.	7,512	4,916	58,421	2,141	70,848	V. 72,989
1988*	Q.	30,378	28,521	33,150	33,142	92,048	Q.125,191
	V.	4,623	4,244	65,949	2,628	74,816	V. 77,444

*.Preliminary

COMMERCIAL FISHERIES BRANCH

Lewie Creed, Director

The Commercial Fisheries Branch is responsible for carrying out a full range of programs and services for P.E.I. fishermen and processors. The Branch includes the four Divisions of Extension, Resource Utilization and Marketing, Aquaculture and Processing and Quality.

The Director is also responsible for ongoing liaison with the Department of Fisheries and Oceans and provides support services on issues addressed by the Federal Provincial Atlantic Fisheries Committee and the Atlantic Council of Fisheries Ministers. As well, the Director coordinates the Department's interface with other Provincial Departments and Agencies.

Fisheries Act Committee

A committee was commissioned by the Minister of Fisheries in 1986, to make recommendations regarding a P.E.I. Fisheries Act. The committee included membership representing fishermen and processors from various organizations in the P.E.I. fishery. The Director was a non-voting member of the committee and provided support and research services to the committee. The Fisheries Act Committee presented their report to Minister Young early in 1988. Subsequently the Fisheries Act was introduced in the Legislature in March 1988 and after review by the Standing Committee, it was referred to the Special Committee for Legislative Proposals. That Committee will present a report to the next session of the Legislative Assembly and final disposition of the Act will be determined.

ECONOMIC REGIONAL DEVELOPMENT AGREEMENT

In June of 1984, the P.E.I. Department of Fisheries and the Department of Fisheries and Oceans signed a five year $10 million Fisheries Development Sub-Agreement. The terms of the agreement call for $7.5 million in federal development spending over the five years and $2.5 million in new development initiatives by the P.E.I. Department of Fisheries.

The Director provided support services to the Fisheries Management Committee which has been organized to coordinate fisheries programs under E.R.D.A. Membership on the Committee consists of the Area Manager, Department of Fisheries and Oceans and a representative of the Atlantic Canada Opportunities Agency representing the Federal Government, the Deputy Minister of P.E.I. Department of Fisheries in addition to a representative of Treasury Board representing the Province. The Committee regularly reviews fisheries programming under the Sub-Agreement to ensure programs of both levels of government are complimentary to each other and to ensure effective response to the needs of the fishery.

The Director also co-chaired the E.R.D.A. Management Committee Working Group which in 1988 coordinated a detailed evaluation of the agreement by the firm of Coopers and Lybrand.

A detailed report on the activities of each Division follows.

EXTENSION DIVISION

Friend Herring and Rory McLellan

The role of the Extension Division is to liaise with fishermen's organizations, assist port committees in harbour development, to organize effective training courses and technical upgrading for fishermen and to provide an information service to the fishing industry and the general public. The Division provides feedback to the Department on industry concerns and assists in the development of sound policies and programs to serve the fishery.

The Extension Division does have an association with the aquaculture sector by organizing and supervising the Oyster Enhancement Project of the Aquaculture Development Program. Details concerning progress with this five year program are available in the Aquaculture section of this report.

During 1988, Friend Herring continued to be the Department's contact to the Western ports of the Province and was available most Thursdays at the Regional Service Centre in Summerside in the mornings and at the West Prince Service Centre in the afternoon. Mr. Rory McLellan is responsible for eastern harbours and maintains office hours at the Montague Service Centre on Tuesday afternoons and Souris on Wednesday afternoons.

FISHERMEN'S INFORMATION SERVICE

A number of information programs were organized or continued and carried out by the Extension Division during the year.

Radio Broadcasts

A weekly five minute radio broadcast covering fish prices and markets was produced by the Division during the period May 12 - November 10, 1988. The program was aired on radio stations CFCY, CHTN and CJRW on weekends. Several local newspapers and one Maritime bimonthly fisheries magazine also carried this information.

Booth Displays

Display booths were placed at major fairs and exhibitions held throughout P.E.I. during the summer months. The purpose of the displays was to increase and promote general awareness of the P.E.I. fishing industry and the role of the Department.

Summer employees Paul MacDonald, Cynthia Chaisson and Roger Campbell were responsible for assembling the displays and supervising their operation at the various events. Displays were placed at St. Lawrence Scallop Festival, Tignish Irish Moss Festival, Souris Trade Show, Summerside Lobster Carnival, Northumberland Fisheries Festival, Country Days and Old Home Week, and the Kensington Harvest Festival.

Two events of special note were the St. Lawrence Scallop Festival where staff was involved in judging the scallop shucking competition and the Northumberland Fisheries Festival where the Department again sponsored the scallop shucking and fish filleting competition. This year, retired master fisherman "Buddy" Clifton MacCormack was available to discuss special fisheries topics of interest to booth visitors. His knowledge and experience was very much appreciated at the shows in Summerside, Charlottetown, and Kensington.

On March 2nd, and 3rd, the Sixth Marine Diesel and Electronics Show was held at West Prince Centre, Elmsdale, where the Department assisted Mary Lou Rogers of Holland College to organize more than 30 exhibitors. More than 500 fishermen and people interested in marine equipment attended the show, which included survival rafts and suits, diesel engines, fishing gear, supplies, and fish handling containers. Plans are for an even bigger and better show in 1989.

Publications

The Extension Division continued the popular promotion button with the logo "Serve P.E.I. Fish-It's Catching" with 15,000 being distributed at booth displays and other functions during the year.

The Extension Division revised and updated a number of species information pamphlets on lobster, cod, scallop, soft-shell clams, mackerel and smelts.

A number of news releases on projects and programs of the Department were provided to local news media and national and international trade journals. Promotional advertisements were also prepared for a number of local, regional and national publications.

PORT MAINTENANCE

During the year 1988, the Department increased activities at shore sites where numbers of shellfish harvesters concentrate with boats and vehicles. A total of 145 concrete slabs (10' x 1' x 0.5') were removed from Princeton shore, and relocated to sites on the East River at Red Point (60 slabs), Ten Mile House (59 slabs) and Basin Head (10 slabs). A lesser number of slabs

were removed from Fortune and relocated at St. Peters Bay (40 slabs) Battery Shore (40 slabs) and Ten Mile House (40 slabs). Minor repairs and improvements were conducted at Mount Stewart and Alaska haul-outs, consisting of straightening slabs moved by ice or vehicles. Five cubic yards of concrete were supplied to a shore access site at Sharpe's shore to allow shellfish trucks to drive on and off the shore.

Shale and rock were placed near the Georgetown baitsheds and the West River shellfish building to control washouts caused by high storm tides. At Cape Egmont, a drainage problem was relieved with a ditching project shared by this Department and the Department of Transportation and Public Works. Other port improvements were carried out at Kiers Wharf, Miminegash and Higgins Wharf.

The Department continued to provide for the minor maintenance and power consumption costs of 118 electrical services located at 61 Island fishing ports or shore sites. These services include wharf lighting systems and electrical outlets, as well as power for water system pumps. This program ensures that adequate lighting and water supplies are maintained and functional for the convenience and safety of all port users. Three of these sites provide electrical needs to oyster harvesters exclusively and these are located at Hickeys Wharf, York Point and Lower Bedeque Bay.

Since 1983, the Extension Division has helped coordinate the port custodian, or night watchman program, to major P.E.I. fishing ports. The Department of Health and Social Services hire and pay their clients through a job creation initiative to carry out periodic checks on property and vessels throughout the fishing season. Approximately 600 people have been employed as custodians since this program first began although the yearly totals are decreasing because of budget restraints. The port committee members do the nightly supervision for these workers and administer the bimonthly reports with positive results for all involved.

FISHERMEN'S HOLDING FACILITIES

A Fishermen's Holding Facilities Program or Baitshed Program was reinstated during the fiscal year 1984-85. This program provides 75% of the material costs required to construct new fishermen's holding or storage units. The maximum grant is $1,000 per unit on new construction or $600 per unit for upgrading existing holding units, when feasible. There is a restriction of limiting financial assistance to once only per fisherman.

Financial assistance during the past four fiscal years is reported in the following table, expressed as numbers of bait shed units.

PORT	FISCAL YEAR 84/85	85/86	86/87	87/88	88/89
Beach Point	2	2	-	3	-
Cape Egmont	-	-	-	2	-
French River	1	-	1	-	-
Georgetown	-	3	-	-	-
Grahams Pond	-	-	1	-	-
Higgins Wharf	1	1	2	-	-
Launching	1	-	1	-	2
Lower Montague	-	-	1	-	-
Montague	-	-	-	2	-
Malpeque	2	5	-	-	-
Darnley	1	2	-	-	-
Milligans Wharf	-	1	4	1	-
Miminegash	-	-	-	8	-
Mink River	-	-	1	-	-
Naufrage	-	3	2	-	1
North Lake	1 + 1 Renov.	-	-	-	-
Red Head (Morell)	-	-	1	-	-
Rustico Harbour	1	-	-	-	-
Skinners Pond	-	-	-	-	1
Souris	-	-	4	-	1
Summerside	1	1	-	1	-
Victoria	1	-	-	-	-
YEARLY TOTALS	12 New Unit +1 Renov.	18	18	17	5

TECHNOLOGY TRAINING PROGRAM (ECONOMIC REGIONAL DEVELOPMENT AGREEMENT)

The purpose of the Technology Training Program is to ensure that training courses with major emphasis on quality and safety improvements are provided to the P.E.I. fishing industry. Training for fishermen which stresses safety at sea is dealt with under the Extension Division. Quality-oriented courses will be described through reports by the Processing and Quality Division.

Recent marine accidents on the Atlantic Coast which resulted in loss of life and equipment have led to increased concern by government agencies responsible for marine safety and prompted investigations such as "A Coast Guard Study Into Marine Safety". Transport Canada, through its Coast Guard Search and Rescue Branch, has stepped up safety-related studies and proposals using several working committees that consist of representatives from

the various levels involved with Canada's fishing industry. Throughout the winter months, Division staff have attended several conferences and meetings pertinent to marine safety.

As a result of these concerns, the Division sponsored a number of courses held in the major fishing communities throughout the Province in January and February. The focus of our safety-related courses this year was navigational skills and the Division sponsored eight courses in Loran C and V.H.F. radio operation. These courses helped fishermen to make better use of their electronic equipment, thereby enhancing safety. As a result of these courses, 73 fishermen now possess a V.H.F. radio operator's license.

The Division also coordinated two 8-week courses called Fishing Master Class IV. These two courses were attended by 21 fishermen, all of whom successfully completed the course and now possess many navigational and safety skills ranging from C.P.R. and firefighting to Loran C operation and celestial navigation.

Traditionally, the Department of Fisheries has worked closely with the Canada Employment and Immigration Commission to deliver fishermen's courses through Holland College. Lately, the CEIC has refocused the priorities for its budget and, as a result, courses such as Boat Refitting and Repair, Nets and Gear Repair and Welding are no longer funded. Where interest is sufficient, the Division will cost-share the previously listed training courses with the participating fishermen using Holland College as a source of instructors and material.

Under this system of cost-sharing (usually 50/50), four welding courses were given at night in Montague, Charlottetown, Summerside and Elmsdale.

The Division also offered courses in Bookkeeping, Computers, Hydraulics and Nets and Gear. In 1988, over 200 fishermen, their wives and crewmen attended courses either sponsored or co-ordinated by the Division. The following is a list of those courses:

FISHERIES SPONSORED TRAINING COURSES 1987-88

DATE	COURSE	LOCATION
Nov. 26-Feb. 1	Welding	Montague High
Dec. 14-21	Loran C-VHF	Summerside School
Jan. 11-March 4	Fish'g Master IV	Montague Lions

DATE	COURSE	LOCATION
Jan. 11-March 4	Fish'g Master IV	Summerside School
Jan. 18-Feb. 12	Nets & Gear	St. Margarets Hall
Jan. 13-Jan. 20	Loran C-VHF	West Prince-Elmsdale
Jan. 27-Feb. 2	Loran C-VHF	Souris Parish Hall
Jan. 25-Feb. 25	Welding	West Isle-Elmsdale
Jan. 25-March 28	Welding	Summerside Vocational
Jan. 25-March 28	Welding	West Royalty Centre
Feb. 11-March 31	Welding	Montague High
Feb. 3-Feb. 9	Loran C-VHF	Montague Curling C
Feb. 10-Feb. 16	Loran C-VHF	Montague Curling C
Feb. 15-March 11	Nets & Gear	Bloomfield Mall
Feb. 22-Feb. 26	Loran C-VHF	Morell Diner
Feb. 8-Feb. 12	Bookkeeping	Bloomfield Mall
Feb. 15-Feb. 19	Bookkeeping	Summerside
Feb. 15-Feb. 19	Bookkeeping	Souris
Feb. 15-Feb. 19	Bookkeeping	Montague
Feb. 15-Feb. 19	Bookkeeping	Charlottetown
Jan. 11-Feb. 19	Intro to Computers	Summerside
Feb. 29-March 4	Hydraulic	Montague Curling
March 7-March 11	Loran C-VHF	Northport
March 14-March 18	Loran C-VHF	French River

During November of 1988, the Department mailed a questionnaire to every bonafide fisherman asking he and his crew to indicate preferences for any and all courses of interest. The response indicated a continued interest in training courses and a desire to participate by Island fishermen, with strong, continued demand being especially noticeable among the younger operators who are new to the fishery. In a further effort to reach fishermen and increase their knowledge of the sea, the Department assisted three community schools in offering condensed sessions with qualified instructors. It is hoped that this will convince participants to enroll in regular training courses in the future.

The courses carried out in 1988 were made possible through a cosponsorship by the Extension Division, Eastern Ventures Corporation and the fishermen themselves, who contributed, in some cases, up to one-half of the cost. The Division also cosponsored courses with the P.E.I. Department of Agriculture and worked with private enterprise such as R.Y. Bookkeeping in the development of new course materials. In most cases, Holland College was used as a source of instructors and materials.

TECHNICAL UPGRADING TOURS

In 1988, the Extension Division sponsored a number of Technical Upgrading Tours for Island fishermen and aquaculturalists. In February, the Division sponsored two Island fishermen and two representatives of fisheries organizations to attend the Maine

Fishermen's Forum at Samoset, Maine. This conference was attended by over 1,000 New England fishermen who discussed American fisheries research into lobster and groundfish, seafood marketing, vessel safety and aquaculture.

In July, the Division sponsored two aquaculturalists to attend an aquaculture conference in St. Andrews and two fishermen to travel to Cape Breton to investigate a sea-based herring offal dumping operation.

In November, the Division, in co-operation with the Department of Fisheries and Oceans, cosponsored a bus tour to Newfoundland. Twenty-four fishermen as well as staff from the Division and a representative from Federal Fisheries took part in this tour. The main purpose of the tour was to attend the World Symposium on Fishing Gear and Fishing Vessel Design in St. John's. The Symposium featured a flume tank demonstration for trawl gear and this was of particular interest to our Island groundfish fishermen.

On route to and returning from the Symposium, the tour visited Isle Madame in Cape Breton and many ports, processing plants, service centres and other points of interest throughout Newfoundland.

SPECIAL MEETINGS

On March 18, 1988, the Legislative Assembly of the Province gave first reading to Bill 38, commonly known as the Fisheries Act and referred it to the Standing Committee on Fisheries, Industry, Tourism and Labour. This Committee sought further input from fishermen and, between sessions of the legislature, another committee of the House undertook public meetings from November 16 to December 7. To prepare fishermen for these meetings, the Division printed and mailed a copy of the Act to every fisherman and other interested individuals. In addition, the Extension Division held 20 meetings at community halls from October 18 to November 3, to answer fishermen's questions and familiarize them with the provisions of the Act. Staff from the Division also attended the public meetings held by the Committee from November 16 to December 7, at various Island locations.

BOY SCOUT JAMBOREE

In July 1989, 10,000 Boy Scouts will be attending a National Jamboree at Fort Amherst. The Extension Division is assisting the organizer of the Jamboree by providing printed materials, shells and aquariums. In addition to providing materials, extension staff are involved in the planning and coordination of this special event.

MOBILE BOAT HOIST

The Department has assisted more than 20 fishermen obtain larger vessels. These vessels, known as the mid-shore fleet, are located at various Island ports and have requirements above and beyond those of traditional Island vessels. One such requirement is the need for equipment larger than the traditional boat hauler to remove them from the water. The Department undertook to provide a large, mobile, boat hoist for use at the port of Souris, where many of these larger vessels are based.

Prior to the purchase of the mobile unit, the Extension Division researched various types of boat hoists, including their capabilities, operating costs and purchase prices.

In order to determine the appropriate hoist for the Island fleet, the Division hired a marine architect to analyze and determine the weight of these vessels. The builders of these vessels were contacted and asked to provide design plans and estimated weights. To provide precise information, the Division, with the cooperation of the Department of Transportation and Public Works, lifted one of the vessels and weighed it using a crane and highway scales.

Once the requirements were finalized, a tender package was issued and a 35-ton capacity, mobile boat hoist was purchased. The hoist is currently in storage in Charlottetown awaiting completion of a new wharf facility in Souris. Expected delivery date for the unit is May of 1989. The Department continues to involve those fishermen who will be the users of the unit in discussions leading to the signing of an agreement with them for its management and operation.

SCHOOL PRESENTATIONS

The Division was responsible for classroom presentations at three Island schools during the year. These presentations included a slide-tape show, and a demonstration of the operation of various types of fishing gear. Students were given time to ask questions of staff and to participate in gear demonstrations.

In 1988, the Division produced "The Island Fishery", a video tape presentation to highlight the Island's diversified fishery. This film will be completed by the summer of 1989 and will be used in schools and at marine and seafood shows to increase awareness of the P.E.I. fishery.

MAMMAL REMOVAL PROGRAM

Since 1973, it has been the responsibility of the Department to remove and dispose of stranded mammals from Island shore locations. A large majority of the 30 strandings in 1988 were harbour seals (25). Three white-sided dolphins stranded at Victoria, two belugas near the North Shore National Park, and a 42-1/2 foot male sperm whale which beached in November at Nail Pond. This Nail Pond location was just a mile or so from last year's blue whale stranding. The two animals are now buried at the same site. The cost of removal this year was $1,354.

General

Staff of the Extension Division represented the Department on various industry committees including: Federal/Provincial Atlantic Fisheries Committee Development Sub-Committee, the District 7B, 7B1 and 8 Scallop Advisory Committees, the District 7B, 7B1 and 8 Lobster Advisory Committees, the Seaplants Advisory Committee, the Marine Safety Advisory Committee, the Search and Rescue Committee, and the Ad Hoc Fisheries Training Committee.

Division staff also represent the Department on the Atlantic Bluefin Tuna Advisory Committee which develops management proposals on an annual basis for consideration and approval by the Federal Minister of Fisheries and Oceans.

RESOURCE UTILIZATION AND MARKETING DIVISION

David Gillis, Barbara Harmes, Gerry Ridgeway,
Barbara Williams, David Younker

The Resource Utilization and Marketing Division represents the interests of the P.E.I. fishery in management consultations carried out with the Federal government to develop fishing plans for various fish species. This Division promotes the maximum utilization of P.E.I. fishery resources and develops and maintains statistical information to support the objectives of the Department.

Major objectives of the Division are:

- To develop data base and to carry out social, economic and biological assessments in order to effecttively represent P.E.I. in the management consultations carried out by Federal Fisheries and Oceans.
- To provide a service to the industry in test marketing new products, and to encourage the development of an improved fresh fish industry on P.E.I.
- To provide market intelligence to the P.E.I. fishing industry.
- To promote the consumption of fish products both locally and outside the Province.
- To work with the fishing industry and other related Departments in developing new products for expansion and modernization of processing capability in order to increase the value of P.E.I. fisheries resources.

A brief description of the programs, projects and activities carried out by the Resource Utilization and Marketing Division during 1988 is as follows:

Management

Staff of the Division represented the Department on a number of species management committees during the year, namely the Atlantic and Gulf Groundfish Advisory Committees, the Gulf Snow Crab Advisory Committee and the Small Pelagics (Herring and Mackerel) Advisory Committee. These Committees develop management proposals on an annual basis for consideration and approval by the Federal Minister of Fisheries and Oceans. Provincial repre-

sentation is of paramount importance in ensuring that the interests of the Province are maintained in the context of the negotiation procedure.

Each Committee involves working closely with fishermen and processor representatives for the various species through personal contact and local Committee structures.

This year saw the addition of a fisheries biologist to the staff of the Division to provide added expertise for assisting in the development of management plans and carrying out necessary research and field studies relating to the Province's marine resources.

The Division has personnel on Canadian delegations dealing with international aspects of the fishery as well. Involvement this year included membership on the Canada-France Advisory Committee dealing with the fishing rights of France and St. Pierre and Miquelon as well as bilateral trade negotiations with Japan.

Federal - Provincial working groups established under the Federal - Provincial Atlantic Fisheries Committee (FPAFC) included the Enterprise Allocation (E.A.) working group and the Licensing Review Working Group. Through these working goups, an extensive review of existing E.A. programs in the groundfish fishery was completed during 1988, and an intense examination of the current licensing policy was completed with recommendations carried forth to the FPAFC.

Product Utilization and Test Production

These programs were designed to support value-added processing by developing and assisting in projects to evaluate new opportunities identified within the fishery.

Rock Crab: A project was entered into with Acadian Fishermen's Co-op to acquire the necessary equipment to extract meat from the rock crab resource available to this facility.

Mussels: A project was undertaken with Atlantic Mussel Growers Corp. to assist their company, as well as other growers on P.E.I., to determine the suitability of Island mussels for secondary processing.

Vacuum Packaging: Assistance was provided to Wendell Graham Ltd. to purchase a vacuum packaging machine to enable this firm to diversify their production methods for lobster and other seafood products.

RETAIL TRADE

a) Retail Seminar

A one day seminar for close to twenty Island fish and shellfish retailers was sponsored by the Division. A variety of topics were covered, and two panel discussions took place. The first panel consisted of representatives from the media discussing the details of advertising. A second panel, with representatives from consumers, restaurants and institutions, covered what the end-user is looking for with regard to seafood. Participants in the seminar included "new" retailers as well as the more experienced ones.

b) Retail Newsletter

"The Seafood Bulletin", a quarterly newsletter for seafood retailers on P.E.I. now has a mailing list of approximately 60. The purpose of the newsletter is to keep retailers up to date on what is happening in the fishing industry and to encourage participation in various promotions co-ordinated by the P.E.I. Department of Fisheries. Information and materials from national promotions are also distributed with this newsletter.

TRADE SHOWS

a) Apex '88 and Hostex '88

In a major promotion of the "Island Blue" cultured mussels, the Department of Fisheries assisted the P.E.I. Development Agency in staffing a booth at the Apex foodservice show in Moncton, N.B., and the Hostex foodservice show in Toronto. At both shows, samples of mussels and promotional materials were passed out. A great deal of support for the "Island Blues" was shown by the restaurant industry.

b) VIVA '88

One of Canada's largest "consumer" shows, "VIVA", takes place each year in Vancouver. At the '88 show in March, the Department assisted Julie Watson, well known cookbook author, to attend and to demonstrate "Island Blue" mussel recipes.

These presentations were well received and samples of mussels were provided to the public to enhance awareness of the product.

SEAFOOD AWARENESS

a) Seafood Barbecues

Out of the Sea and Over the Coals -- a barbecue promotion program was carried out in National, Provincial and private campgrounds from June to September. Two summer students were employed to travel to the campgrounds and conduct demonstrations which concentrated on how to barbecue seafood. During the demonstrations, the staff discussed the value of the Island fishery, the different methods of cooking seafood and its high nutritional value. Approximately 2000 people attended these demonstrations during the summer period and had the opportunity to sample the barbecued fish, collect various recipe brochures and ask questions pertaining to P.E.I. seafood.

b) Seafood Festivals

In addition to the campground demonstrations, staff participated in a number of fishery festivals that are held across the province. At these events, staff gave a brief explanation on how to barbecue seafood and distributed samples of the fish that was prepared on the grill. The major fishery festivals attended included Northumberland Fisheries Festival, Saint Lawrence Scallop Festival and the Souris Regatta.

c) Car Ferry Displays

To follow up on the success of 1987's pilot project, one summer student was hired to set up a display booth on the car ferries "M.V. Confederation" and "M.V. Abegweit". During the crossings the preparation of seafood dishes was demonstrated and samples were then distributed. Travelers had the opportunity to ask questions about where to buy seafood as well as general questions on cooking fish and shellfish. Pamphlets were also distributed during the demonstrations.

d) Test Kitchen

The test kitchen facility served as a base of operations for all summer staff working on promotional activities. As well, the fully equipped kitchen was used when developing and testing recipes. In addition, the kitchen was used when preparing for demonstrations, displays and trade shows. Upon request, the kitchen was also available for use by members of the seafood industry.

e) Seafood Advisory Council

In 1988, the Department became a member of the Seafood Advisory Council. This national organization consists primarily of members of the seafood industry and has the task of co-ordinating

national promotions of seafood. Through membership in this group, P.E.I. now has input to promotion planning and access to promotional materials and resources.

f) Restaurant Promotion

In co-operation with the P.E.I. Department of Agriculture, a restaurant promotion was carried out during 1988. The promotion, under the title of "Select Island", was aimed at encouraging Island restaurants to serve additional Island products. At the semi-annual workshop/meeting of the P.E.I. Restaurant Association, several presentations were made on the value and methods of promoting local products. Newly developed recipes were demonstrated, with some being sampled during the luncheon. Resource materials were also distributed. These resource materials and technical advice were available throughout the summer.

g) Seafood Demonstrations/Display

(i) In-Store Demonstrations - A series of in-store demonstrations were carried out during the month of June. A variety of seafoods were prepared with samples and recipe brochures being distributed.

(ii) Booth Demonstrations - A summer employee carried out seafood cooking demonstrations in conjunction with the general fisheries booth that the Extension Division of the Department placed at major Island festivals. The festivals attended included; Souris Exhibition, Tignish Irish Moss Festival, Eastern Kings Marine Show, Summerside Lobster Carnival, Northumberland Fisheries Festival, Northport Aquatic Days, Tyne Valley Oyster Festival, Charlottetown Old Home Week and Kensington Harvest Festival. The demonstrations were a major attraction with many people stopping to ask questions, collect recipe brochures and sample seafood.

(iii)Special Events - A variety of consumer demonstrations were carried out as requested by groups including community schools and senior citizen clubs. Special displays were set up for events such as the West Isle Marine Show, Rainbow Valley Fisheries Day and the opening of the seafood retail outlet at the Charlottetown Airport.

(iv) Mussel Promotion - To gain increased exposure for "Island Blue" cultured mussels, efforts were made to feature mussels at provincial, national and international gatherings. Mussels were provided to a number of groups representing P.E.I. at national events, as well as to conferences being hosted by Island organizations.

h) Promotional Material

(i) This Week on P.E.I. - In cooperation with P.E.I. seafood retailers, an attractive, full-colour, two page advertisement was inserted in the "This Week on P.E.I." summer weekly publication. The ad featured a colour photograph of Island seafoods and a listing showing the location of the thirty-six participating retail establishments. Approximately 200,000 copies of this brochure were distributed.

(ii) **November Fish and Seafood Month Brochure** - To commemorate the celebrity cooking contest that was held to launch the 1987 November Fish and Seafood Month, a recipe booklet was released in November 1988. The booklet entitled "Celebrity Seafood Recipes" contains the eleven recipes that were prepared by political, industry and media representatives during the cooking contest.

(iii) Restaurant Menu Book - In cooperation with the P.E.I. Department of Agriculture, a full page colour advertisement was placed in the Island Restaurant Menu Book. Approximately 50,000 copies of the book were distributed across P.E.I. The purpose of the ad is to encourage restaurant patrons to order quality Island menu items.

(iv) Display Panels - To assist retailers in attractively displaying promotional brochures, a colourful pamphlet display panel was developed. The panel is designed to sit on the top of a fish counter and hold one featured brochure.

(v) Barbecue Video - A video presentation on how to barbecue seafood was prepared. The tape entitled "Seafood Over the Coals" will be made available on loan to Community and Church groups for use at meetings. It will also be used as part of consumer presentations and at in-store demonstrations.

(iv) General - An assortment of promotional materials, including brochures, posters, hanging mobiles, pins, aprons, and stickers were reprinted and used in an effort to gain increased exposure for seafoods. These materials were distributed in response to numerous requests from retailers,consumers and educators.

i) Advertising

Advertisements on the variety and availability of Island seafoods were placed in newspapers and magazines throughout the year and regular consumer articles were inserted in a local paper on a bimonthly basis.

Through the "Telegraphics Computer Terminals" set up at strategic locations on P.E.I. (i.e. Confederation Centre, Charlottetown Airport), information was made available to the public on the dates for fishing festivals, and locations of barbecue demonstrations.

j) **June Seafood Days** - For the first time, the three Maritime provinces joined in a seafood promotion. During the month of June, various promotional activities took place under the "Seafood Forever" theme.

To launch the promotion, teams from each of the three Maritime provinces were challenged to barbecue the best seafood recipes. The teams, captained by their respective Minister of Fisheries, included a representative from the media and the fishing industry. On June 1, they met at the Amherst Tourist Bureau and carried out a giant cook-off that was well attended by the public and the media.

In support of the promotion, a new brochure on barbecue and picnic recipes was developed. For the foodservice industry, a poster, recipes and placements were made available.

A number of in-store demonstrations were also held during June and a recipe contest was carried out through the newspapers.

Overall the June promotion was very well received and will continue to be a part of the Department's promotion program.

k) **Committees**

Staff held membership on the P.E.I. Primary Products Marketing Committee, the Atlantic Seafood Promotion Committee and the Interdepartmental Nutrition Committee.

STATISTICS AND MARKET INFORMATION

The Statistics section of this Division has, as a primary purpose, the function of acquiring and making available to the Department, and to the industry, detailed and timely statistical information on all segments of the fishery in this Province. During 1988, information was updated in such areas as fish landings and values, seafood production, fish processors and their products, employment levels in fishing, export sales figures and other related topics. As well, publications containing this type of information were prepared and released.

(a) Fish Price and Market Report

The compilation of this weekly report involved the collection of information on fish prices and market conditions and was provided to the fishing industry through the Department's radio program and regional newspapers. This data was collected at the end of each week to provide a view of the previous week's prices. A selected number of processing plants on P.E.I. and a number of fishery representatives from other Atlantic Provinces were contacted for fish prices. Maritime fish prices were confirmed through a weekly telex supplied by the Department of Fisheries and Oceans in Halifax. Information on prices and market trends for the Eastern United States was received from the National Marine Service in Boston, Mass.

(b) Statistical Review

The Fisheries Statistical Review was compiled to present a historical overview of P.E.I.'s fishing industry. This document consists of fish landings and values by species and by district, average prices received by P.E.I. fishermen, seafood products of each of the Atlantic Provinces, catches and values of fish from the other Maritime Provinces, exports by product and country of destination, numerous graphs, and other related fishery data. The Review has been updated and is available for public distribution.

(c) Tuna

This Division annually monitors and analyzes fishermen's catch records to provide information on which to base future management decisions.

The P.E.I. bluefin fishery grew from a total of five fish landed in 1967 to a peak of 1,048 fish landed in 1974. The allowable quota for P.E.I. from 1985 to 1987, was 660 fish. In 1988, the allowable quota for P.E.I. was reduced to 476 fish or 190 metric tonnes.

In 1988, 173 tuna, or 62 tonnes of tuna were landed by P.E.I. fishermen. Of these 173 fish, 70 were landed in Nova Scotia.

The "tended line" fishing method was introduced to this fishery in 1981 and today the majority of bluefin tuna are landed by this method. Rod and reel fishing continued from some ports by those fishermen who charter their fishing boats. In 1988, all tuna landed by P.E.I. fishermen were caught by the tended line method.

The average weight of tuna landed on P.E.I. in 1988 was 945 lbs. with the largest tuna weighing 1,236 lbs. (For comparison, in 1987, the average weight of all tuna landed was 971 lbs., with the largest tuna weighing 1,275 lbs).

The following is a summary of the number of tuna landed by port for the past five years.

Port	1984	1985	1986	1987	1988
Sea Cow Pond	-	7	12	-	5
Tignish	219	95	34	33	98
North Rustico	2	5	-	-	-
French River	1	1	-	-	-
Tracadie	-	4	-	-	-
Savage Harbour	1	7	1	-	-
Morell	7	15	-	2	-
Naufrage	44	34	4	4	-
North Lake	46	39	17	7	-
Annandale	3	2	-	1	-
Graham's Pond	-	1	-	-	-
Beach Point	10	4	1	-	-
Murray Harbour	1	7	5	-	-
TOTAL	334*	222	74	47**	103***

* Additional landings of 58 by P.E.I. fishermen in N.S. ports for a total of 392

** Additional landings of 8 by P.E.I. fishermen in N.S. ports for a total of 55.

*** Additional landings of 70 by P.E.I. fishermen in N.S. ports for a total of 173

The bluefin tuna received a wide range of prices in 1988. P.E.I. fishermen received tuna prices ranging from $3.00 - $12.00 per pound for the tuna they landed in P.E.I. and N.S. In 1987 the price received for tune ranged from $3.00 - $5.50 per pound.

The week showing the largest catch of bluefin tuna in 1988 on P.E.I., was September 4th - 10th, when 45 tuna were landed. In 1987, the week of the largest catch was August 30th - September 5th, when 16 tuna were landed.

(d) Snow Crab

This Division also monitors snow crab landings throughout the fishing season to provide information upon which to base management decisions.

P.E.I. was granted 16 exploratory permits in December of 1984 and a further 14 snow crab exploratory permits were granted in April 1986. The first 16 exploratory permits were converted to permanent licenses in 1987 and the other 14 remain as exploratory permits. P.E.I. snow crab fishermen operate in two zones, 25 & 26 and fish primarily off the North Shore of P.E.I.

Area 26, is the larger of the zones. In 1985, only P.E.I. fishermen were permitted to fish in these zones. However, in 1985, permission to fish in these zones was granted to a number of offshore vessels from Quebec and New Brunswick by the Department of Fisheries and Oceans and they retained this privilege in 1987 and 1988.

The snow crab fishery is monitored by the Federal Department of Fisheries and Oceans with regard to quality and fishing seasons. This year, on P.E.I., the snow crab fishery was open from April 28th to July 5th and from October 3rd to October 31st. Landings by P.E.I. fishermen in the spring season were 998 thousand pounds while 483 thousand pounds were landed in the fall period. This indicates an increase in landings of 9% compared to 1987.

(e) Seafood Products Directory

The Seafood Products Directory was updated twice during the year. This publication indicates the seafood products produced by P.E.I.'s Provincially licensed and Federally registered export plants and P.E.I.'s Provincially licensed non-export plants. It also includes the major shellfish shippers and their seafood products, as well as a listing of trout growers, fish agents/brokers, and seaplant companies. This year, maximum employment figures were collected from each seafood processing plant with each plant having an employment code to show the approximate number of employees during peak season.

This publication is a buyer's guide for seafood produced in the Province and it is distributed upon request.

(f) General

The Fishery Statistics pamphlet was reprinted to reflect annual up-to-date information. This pamphlet is used as a quick guide to research fishery statistical data, and is used in all information packages sent from the Department.

The Bluefin Tuna pamphlet was also reprinted to reflect current statistics. This pamphlet is distributed to tuna charter establishments, interested processors, school children and in general is used as a reference for numerous requests on this fishery.

(g) Resource Monitoring

The Resource Monitoring Program monitors fish landings to provide basic information to assist in determining the Province's position for input to species management committees and industry development strategies. The Program employed two seasonal employees from early May to the end of August. The primary data

collected were length frequencies of pelagic and groundfish species. This monitoring has been conducted by the Department since 1979. Although the data does not necessarily represent sampling carried out during precisely the same time period each year, it is given below in comparative tabular form to give an indication of trends in the fishery.

The data collected under this program provides basic information on various fish species to serve as a base to assist in determining the Province's position within the various fisheries management committees and industry development strategies.

Table 1 below indicates the number of herring and mackerel measured and the average (arithmetic mean) length of each sample collected from the commercial catch. Overall, (from 1982 to 1988) the average length of herring obtained from 31,216 measurements is 28.9 centimeters. Based on 39,439 mackerel measurements collected from 1982 to 1988 inclusive, the average length of mackerel is 34.8 centimeters.

TABLE 1
SAMPLE SIZE AND AVERAGE
LENGTH OF HERRING AND MACKEREL, 1982 - 1988

YEAR	HERRING		MACKEREL	
	SAMPLE SIZE	AVERAGE LENGTH (CM)	SAMPLE SIZE	AVERAGE LENGTH (CM)
1982	3,506	29.1	2,748	38.6
1983	3,304	30.1	1,297	33.5
1984	6,660	28.9	5,779	33.2
1985	1,957	28.7	3,060	33.6
1986	3,553	29.3	9,629	34.0
1987	3,624	28.6	4,086	35.2
1988	8,612	28.6	12,840	35.7

From 1979 to 1988, inclusive, the average length of cod measured was 51.8 centimeters. Statistics from 1979 to 1988 are given in Table 2 below.

TABLE 2
SAMPLE SIZE AND AVERAGE
LENGTH OF COD, 1979 - 1988

YEAR	SAMPLE SIZE	AVERAGE LENGTH (CM)	YEAR	SAMPLE SIZE	AVERAGE LENGTH (CM)
1979	1,209	51.3	1984	5,982	53.2
1980	1,429	53.8	1985	16,307	52.9
1981	248	58.8	1986	12,781	54.0
1982	6,413	54.8	1987	25,711	49.9
1983	8,064	55.1	1988	13,276	49.6

Sample data for cod were collected from a number of gear types. The average length of cod based on these measurements is presented in Table 3, by gear type and year.

TABLE 3
AVERAGE LENGTH OF COD
BY GEAR TYPE, 1982 - 1988

GEAR TYPE	1982	1983	1984	1985	1986	1987	1988
Offshore	56.6	57.2	-	58.8	59.9	-	43.5
Danish Seine	52.2	57.6	48.7	50.9	47.5	48.1	49.6
Pair Seine	53.3	56.3	50.9	51.8	51.5	48.6	49.0
Single Dragger	51.3	54.7	51.6	51.0	49.2	48.2	49.3
Nets	60.1	60.4	61.4	55.9	58.2	54.4	53.3
Longline	59.4	55.3	54.0	54.3	61.4	53.0	51.9
Handline	52.4	53.4	54.9	52.0	50.0	49.2	60.4

The average length of hake based on 74,851 measurements collected from 1982 to 1988, inclusive, is 65.1 centimeters. Annual sample sizes and average lengths for hake are contained in Table 4.

TABLE 4
SAMPLE SIZE AND AVERAGE
LENGTH OF HAKE, 1982 - 1988

YEAR	SAMPLE SIZE	AVERAGE LENGTH (CM)
1982	8,515	67.1
1983	9,121	68.6
1984	12,586	60.3
1985	11,003	66.2
1986	7,507	68.4
1987	14,958	62.0
1988	11,161	57.2

TABLE 5
AVERAGE LENGTH OF HAKE
BY GEAR TYPE, 1982 - 1988

GEAR TYPE	1982	1983	1984	1985	1986	1987	1988
Danish Seine	64.7	67.4	55.4	60.6	61.5	57.4	57.0
Pair Seine	65.2	62.9	62.5	61.1	63.6	55.9	58.0
Single Dragger	61.9	63.2	62.5	59.0	58.7	54.3	59.0
Nets	69.8	69.7	71.1	69.5	71.4	67.5	57.0
Longline	67.5	71.8	68.5	73.5	71.8	68.0	56.0

On Prince Edward Island, redfish is harvested by offshore draggers. Table 6 presents sample sizes and average lengths of redfish for the time period 1981 to 1988, inclusive.

TABLE 6
SAMPLE SIZE AND AVERAGE LENGTH OF REDFISH, 1981 - 1988

YEAR	SAMPLE SIZE	AVERAGE LENGTH (CM)
1981	2,669	30.9
1982	5,206	30.9
1983	4,363	31.7
1984	6,626	31.9
1985	1,785	29.2
1986	5,928	31.4
1987	-	-
1988	8,369	30.4

Data are collected on four flatfish species harvested by the commercial fishery on Prince Edward Island. Average lengths are presented, by species and year, in Table 7.

TABLE 7
AVERAGE LENGTH OF FLATFISH 1984 - 1988

SPECIES	1984	1985	1986	1987	1988
Greysole	31.1	42.4	48.6	47.6	44.7
Yellowtail	29.0	29.8	30.2	30.7	32.1
Flounder	37.5	37.1	36.9	35.1	36.0
Blackback	29.5	29.6	28.7	28.8	30.6

Computer

Statistical data such as information from the Resource Monitoring Project, fish prices and landings, Boston groundfish and shellfish prices, tuna landings, employment levels in processing plants, and fish exports were added to the data banks in the Department's computer.

General

(a) Project Referrals

In conjunction with other Divisions of the Department, staff evaluated requests for expansion, modernization or new construction of processing facilities for use by Departments and Agencies involved in financially supporting the fishing industry.

(b) Fish Buyer Licenses

A report on fish buyer licenses was commissioned by the Department in 1988. George Wright, assisted by staff of the Division, carried out meetings and accepted briefs from a cross section of the fishing industry. A report was presented to the Minister of Fisheries and several of the recommendations were implemented by the Department.

(c) Pre-Market Study

In conjunction with the Processing and Quality Division and Abegweit Seafoods, the Division co-sponsored an investigation into the Toronto, Ontario market for fresh groundfish fillets. The objective of this demonstration project was to investigate the development of wider markets and premium prices for P.E.I. fresh fillets processed from inshore landings using the latest developments in handling and processing techniques and to encourage more processing of P.E.I. groundfish in Island plants.

(d) Special Redfish Program

A number of consultative meetings were attended with the Federal Department of Fisheries and Oceans and industry members concerning the establishment of the Special Gulf Resource Short Plant Program. This program provided 6,000 M.T. of Gulf redfish to be administered by a Board of Directors chosen from participating plants throughout the Gulf region.

(e) Herring Studies

Two studies were undertaken on herring during the year.

(1) The P.E.I. Fishermen's Association was contracted to carry out work relating to methods that could be implemented to improve the quality of herring landed in Prince Edward Island.

(2) David MacEwen, St. Peter's, P.E.I., was contracted to determine the feasibility of carrying out value-added production on herring landed on P.E.I. with special emphasis on bloater production.

It is anticipated that both these studies will provide information for improving the herring industry on P.E.I.

AQUACULTURE DIVISION

Irwin Judson, Brian Gillis

The Aquaculture Division is responsible for carrying out programs and services for Prince Edward Island aquaculturists, including mussel and trout growers and the oyster fishery, as well as growers of other species such as quahaugs, bay scallops, and salmon. The Division also provides ongoing liaison with the Department of Fisheries and Oceans and other agencies in respect to activities in aquaculture development, management and research.

1988 was the first full year of operation of the Agreement for Commercial Aquaculture Development signed between the Department of Fisheries and the federal Department of Fisheries and Oceans. This agreement has served as the framework for federal/provincial cooperative management of aquaculture.

The Department of Fisheries continued its ongoing programs in support of mussel and salmonid culture, as well as the 5 year $2.25 million Aquaculture Development Program begun in 1987. This program is a cooperative undertaking between the Department, the Department of Health and Social Services and the aquaculture industry. Program planning and implementation is carried out in close consultation with the Department of Fisheries and Oceans and the associations representing the various components of the aquaculture industry. Funding is provided for projects in oyster enhancement, trout and mussel production, quahaug culture development and soft shell clam depuration.

The mussel monitoring program continued providing 104 mussel growers in sixteen major mussel-producing areas with information on water temperature and salinity, mussel meat-condition index and concentration and size of mussel larvae. As a result of the mussel toxin crisis of 1987-88, other items were monitored on a trial basis. The diatom Nitzschia pungens has been closely linked with the toxin problem and the estimated numbers were noted when the diatom was observed. As well, the project provided field trials for a chemical spot test under development by the Bedford Institute of Oceanography as a possible pre-screening or predictive field test for domoic acid toxicity. In support of efforts of various academic research and regulatory agencies aimed at understanding the shellfish toxicity, the project provided a wide range of samples, information and field assistance. Where possible, the project has tried to provide such assistance without substantially redirecting its resources away from its focus as a technical advisory service to Prince Edward Island mussel growers.

In spite of the toxic mussel episode, the mussel industry remained optimistic and continued its growth, attracting new growers and expanding its production. An estimated three million pounds, up about 30% from 1987 levels, were landed in spite of the closure to harvesting of some sites for up to ten weeks over the December 1987 to February 1988 period, lower prices and market sensitivity to media coverage of the toxicity event. Some of the 1987 crop was carried over and is now moving to market.

Although the toxicity returned to the affected areas in 1988, and caused the closure in November and December of Cardigan River, Montague River, Brudenell River and St. Mary's Bay, the stringent monitoring system applied by the Department of Fisheries and Oceans, has been successful in averting any danger to the health of consumers. Shellfish areas are closed to harvesting when levels of domoic acid exceed 20 parts per million in mussel flesh.

In cooperation with the Processing Division, a trout-processing seminar was presented at Holland College, Summerside Centre, on March 15, 1988. The objective was to demonstrate proper harvesting and handling techniques as well as the factors involved in putting out a product meeting exacting standards. The seminar was attended by approximately fifteen growers. Toward the end of 1988, the Trout Growers Association had undertaken to organize a coordinating marketing system for their product.

A tour of New Brunswick salmon production and demonstration farm facilities by P.E.I. growers, was coordinated by the Department in February.

Arctic char is gaining substantial interest as a potential species for aquaculture. Two hatcheries have stocks under experimental permission, contingent upon research studies into the interaction of char and local species. Preliminary hatchery results indicate that char may perform well under culture in P.E.I.

To provide the salmonid culture component of the P.E.I. aquaculture industry with a clear sense of direction for its further development, the Department of Fisheries, in cooperation with the Department of Fisheries and Oceans, commissioned a study by UMA Engineering Ltd. in September, 1988. The objective of the study was to suggest a framework of recommendations for industry and government to use as a base for a strategy for the further development and management of the commerical salmonid culture industry.

A preliminary assessment of public and private investment in aquaculture in Prince Edward Island was undertaken in-house late in 1988. The objective of the study is to quantify public and

private investment in mussel culture, trout culture and the oyster fishery through the examination of government and private expenditure, and the resulting value of production, employment and income of the aquaculture industry. The results of the study are as yet incomplete.

On the shellfish scene, a renewed interest in scallop culture became evident in the industry in 1988. One grower produced approximately one hundred kilograms of bay scallops in 1988, and at least two other producers have undertaken preliminary trials.

Taking advantage of the Department of Industry's Provincial Youth Development Program, the Department was instrumental in supplying five students to trout growers and eight students to mussel growers for the purpose of gaining job experience.

Aquaculture Incentive Program

1988 marked the seventh and final year of the Aquaculture Incentive Program which was designed in 1982 with assistance of the Trout Growers Association and Cultured Mussel Growers Association. The program terminated March 31, 1988, and was replaced by the Production Enhancement Incentive component of the Aquaculture Development Program. The form and amount of assistance depended upon whether it was (a) a mussel operation or (b) a trout operation.

a) **Mussel Growing:** A buoy stockpile was established upon which a mussel grower could draw up to 1,000 buoys.

   Since its inception, the program has provided a total of45,675 buoys valued at $106,209 to 72 mussel growers. No expenditure was made in 1988 in this component of the program.

b) **Trout Growing:** Interested trout growers each submitted a proposal for development of his trout operation and indicated the specialized items for which he desired assistance, to a maximum assistance of $2,000. In addition, the grower was forgiven the cost of up to 500 fingerlings for the first year. Two trout growers received a total of $2,000 in repayable assistance and 1,000 fish valued at $1,500 prior to termination of the program in 1988.

   Thirty-one growers have received a total of $28,612 in repayable assistance as well as 13,000 fingerlings valued at $9,301 since the program began.

   With the exception of fingerlings, the mussel or trout

grower is required to repay the value of the assistance, plus interest. When the assistance is repaid in full on or before the date of maturity, an incentive grant in the form of a 25% deduction of the capital advance will be allowed.

Aquaculture Loan Program

The Aquaculture Loan Program is available to bonafide mussel and trout growers possessing the necessary leases and licenses as well as at least two years pilot-scale experience who wish to scale up to a commercial operation. Initiated in late 1983 to provide confidence in the aquaculture industry to the financial community, the program has supported loans through the Prince Edward Island Lending Authority in the amount of $520,632.

In December 1988, one mussel grower covered under the program, declared bankruptcy. The crop was repossessed by the Lending Authority and the Department of Fisheries cooperated in preparing the crop for overwinter.

Aquaculture Development Program

The program is based on a flexible five-year development strategy and is comprised of five components: oyster enhancement, quahaug culture, mussel production enhancement, trout production enhancement and soft shell clam depuration.

Oyster Enhancement Project

During 1987, an oyster enhancement project was begun in cooperation with the Department of Fisheries and Oceans and the Prince County Shellfish Association. This Association is legally incorporated and represents the shellfish interests of all Island harvesters of shellfish in public grounds.

The aim of this project is to increase the Island's production of oysters which, in turn, increases the financial returns to the harvesters, dealers and the provincial economy. Efforts begun in 1987 to collect oyster spat by use of collector material, to relay oysters from areas of heavy concentration to areas of lesser concentration, and to de-silt the bottom to improve the conditions for natural spat collection were continued and expanded during the past year.

To assist in implementing these plans, the Department of Health and Social Services developed a job creation program to provide the employees needed to carry out the activities which the project involves. Approximately two hundred and fifty thousand dollars was approved by Health and Social Services for the salaries of approximately 90 welfare recipients referred to

the job by that Department's offices in O'Leary, Summerside and Charlottetown. Charlottetown and Ellerslie are two main activity centers for coordination of the Program.

Actual work accomplished included preparing and filling approximately 70,000 mesh bags with oyster shell which acts as a collector for the free swimming larva to "set-on", as it becomes the spat and then the seed oyster of the future. These collector bags were suspended in designated rivers and creeks on hardwood (poplar) fences in mid-July. The actual fencing material (small diameter, 15-foot poles) was cut on Department of Forestry property (primarily in the Mount Stewart area) and trucked to sites on the East River and the Smelt/Paugh Creek areas. Approximately 4,000 poles were cut to allow for adequate fencing to accommodate the 70,000 collectors by using buoyed back-line systems for suspending the shell bags.

Beginning in mid-September, the collector bags were lifted from the fencing, then opened, boxed and transported to a number of good grow-out rivers such as East River, Lot 16, Bideford, Bedeque Bay and Wilmot. The new oysters had, by this time, grown on the shell collectors to about 18mm to 24mm (the size of a dime or a quarter). These young oysters will grow to market size (75mm) within 5 years providing added income valued at one million dollars. Nearly 3,000 - five peck boxes of spat were collected this year to "seed-out" new areas and enhance heavily-fished grounds.

At selected areas within the East River (Mt. Stewart and Pisquid) and Bedeque, a total of approximately 4,000 boxes of oysters and shell were relayed to deeper, better growing bottom and these oysters should be ready for market within three years with a value of nearly one-half million dollars. These relay activities are expected to be substantially increased when a federal Department of Fisheries and Oceans barge-pump is in full production for harvesting both shell and clusters of live oysters. These oysters will grow faster and straighter when declumped and moved to new growing bottom.

The oyster enhancement project requires a considerable number of oyster dories, outboards and related equipment, all demanding continual repair and maintenance. During the period December to March, in preparation for the 1989 season, the work will include construction of five fibreglass dories. Similar dories constructed early in 1988 worked well during the past season and helped to increase proposed activity.

The job-creation employees were supervised by a staff of four managers funded through direct grants from the P.E.I. Department of Fisheries and the Department of Fisheries and Oceans, provided to the Prince County Shellfish Association as

the administration agency. Travel expenses and material purchases needed to equip the project were also jointly funded by the two levels of government.

The oyster harvesters and dealers are satisfied with the progress achieved in 1988 considering it was year two of a five-year program. Various aspects of the project will be expanded, refined or modified through joint discussions among all the interest groups represented in this oyster enhancement project.

Quahaug Culture

Research into the feasibility of quahaug culture on P.E.I. was conducted in 1987. In 1988, the results of this research were compiled in a report entitled "Quahaug Culture on Prince Edward Island Past Development - Current Technology - Future Options". The findings of this report indicated that quahaug culture has potential on P.E.I. and is worthy of further investigation. Consequently, a quahaug culture incentive program was initiated that would encourage private growers to become involved with quahaug culture, with Department staff working with them in the development of culture techniques. Fifty individuals indicated their interest in the program and had their lease sites assessed in relation to bottom suitability, water quality and security. Applications were received from 27 of those contacted and, from those, 12 were selected to participate in the program.

During 1988, the Holland College Aquaculture Technology course, offered at the Ellerslie Fisheries Station, spawned and raised quahaug seed for the incentive program. The Department of Fisheries took charge of these seed in June and because of their small size, continued to grow them in the hatchery, in an upweller system, for the summer.

Between mid-September and October 4th, each grower received 9,500 quahaugs ranging in size from two mm to ten mm. These quahaugs were spread in bottom plots that were set up intertidally on the sites of selected growers. These plots were designed to contain and protect the quahaug seed from predators. Although many of the seed spread in the plots were small and may not produce positive results, information on how the plots themselves function in our winter conditions will be valuable in planning for the fall of 1989.

Approximately 250 of the largest seed (9 - 12 mm) were retained in the hatchery as brood stock for future years.

Again for 1989, arrangements have been made for quahaug seed to be produced at the Ellerslie Fisheries Station in conjunction with the Holland College Aquaculture Technology Course. In order to ensure adequate numbers of large seed, a Department of Fisheries technician will be responsible for seed production.

This arrangement allows seed to be produced for a reasonable cost and provides Holland College students with the benefit of a technician knowledgeable in all aspects of shellfish culture.

In the fall of 1988, quahaugs were brought into the hatchery to act as brood stock, selected from various areas of P.E.I., . Algae cultures were acquired and food production was started. The conditioning of brood stock was initiated on December 5th in order that spawning could be carried out on January 3rd, 1989. This early spawning should ensure the availability of 750,000 (five mm to eight mm) seed quahaugs in early June 1989.

The close of 1988 saw the quahaug culture incentive program well underway with the participants and lease sites selected and winter test plots established. A supply of five mm to eight mm seed to quahaug growers early in June, 1989, will allow intertidal cages (as used in Cape Cod) to be tested and the growth and survival of quahaugs in different areas of P.E.I. to be determined. The Department also plans to grow some quahaugs in floating trays and intertidal cages in the same general locations to compare the growth in these nursery units.

Mussel Production Enhancement Incentive Program

The Mussel Production Enhancement Incentive Program is designed to assist mussel growers, who have shown satisfactory results in their pilot projects, to expand. The program provides a 25% grant to a maximum assistance of $1,000 for specialized gear and equipment. In 1988, fourteen growers participated for total grant assistance of $11,949.

A total of $26,598 in grant assistance has been provided to 30 mussel growers since the program began in 1987.

Trout Production Enhancement Incentive Program

The Trout Production Enhancement Incentive Program is designed to assist trout growers who have demonstrated viability in pilot-scale operations to expand. The program offers a 50% grant to a maximum assistance of $3,000 for buildings and equipment specifically for trout culture. In 1988, nine trout growers participated for total grant assistance of $25,779 and this represents the total assistance provided to date in this program.

Clam Depuration

In an effort to demonstrate the commercial depuration of shellfish, particularly soft shell clams, the Department of Fisheries entered into an agreement with a private firm at Annandale.

The objective of the agreement is to develop a shellfish depuration project through the evaluation of facilities, equipment and techniques. The facility is presently under renovation and will be operational by the spring of 1989. It will be a land-based tank operation using water treated with ultraviolet light.

PROCESSING & QUALITY DIVISION

Lloyd Murphy, Lynn A. Wall

The role of the Processing & Quality Division is to encourage innovative processing techniques to satisfy market demand and improve fish quality. Two personnel act as a resource center for the fish processing sector. The Division implements the P.E.I. Fish Inspection Act and Regulations, the Processors Quality Enhancement Program, and other related quality improvement and development initiatives.

Activities undertaken during the twelve months ending December 31, 1988 are as follows:

Fish Inspection Act

The P.E.I. Department of Fisheries is responsible for inspection on intra -provincial trade in fish and fish products while the Department of Fisheries and Oceans is responsible for inspection of products exported from the Province. The Prince Edward Island Fish Inspection Act and Regulations gives the Province authority to ensure seafood is purchased, processed and marketed under sanitary conditions.

Each registered non-export facility is routinely inspected to determine if plant construction and sanitation regulations are in compliance.

Over the past few years, the inspection requirements for fish products processed, purchased and sold on P.E.I. have increased considerably. With the number of non-export facilities increasing, the need for inspection services is essential to perserve fish quality.

Requests from industry to monitor fish purchasing practises at wharves and buying stations to assure quality standard compliance, resulted in the P.E.I. Department of Fisheries taking appropriate measures. The Department hired two seasonal inspectors in addition to the one full time Inspection and Processing Technician. In total, four Inspectors were sworn in under the P.E.I. Fish Inspection Act and Regulations.

Certificates were issued to each buyer upon the inspection of their buying faciliites and vehicles used to transport raw product. In excess of 640 inspections were carried out over a four month period.

Due to the increasing trend of unprocessed product leaving the Island the Department has increased it's monitoring of fish buyers licences. In the case of canner lobster, the Department encourages any company or individual to process 50% or more of their canner lobster purchases on P.E.I.

Licencing

The licencing system for 1988 was altered to improve quality compliance. Changes included a more detailed recording of inspections and provision for licenced buyers to receive licences which were directly applicable to the species they purchased, and made issuance of licenses dependant upon meeting quality standards developed for each group of species purchased. Technological advancements were made in the method in which licences were issued and recorded. All Fish Buyers and Processors data are now computerized which permits easy access and maintainence accurate records.

The Fish Buyer Licences are broken down into four individual catagories. They are:

(1) Crustaceans
(2) Molluscs
(3) Groundfish
(4) Pelagic

Buyers purchased only those licences which were applicable to their operations.

A separate Fish Peddlers Licence was made available to those individuals who participated in the peddling of fishery products.

The Fish Processors Licence remained virtually unchanged with the exception of clarifying certain licencing aspects.

TOTAL NUMBER OF BUYING LICENSES ISSUED IN 1988: 512

GROUNDFISH LICENCES:	106
PELAGIC LICENCES:	111
MOLLUSC LICENCES:	116
CRUSTACEAN LICENCES:	179

TOTAL NUMBER OF PROCESSORS LICENCES ISSUED IN 1988: 63

Processors Quality Improvement Program

During the 1988 season, 18 federally registered processing plants on Prince Edward Island participated in the Processors Quality Improvement Program. Under this program, financial assis-

tance was available on a 50/50 cost shared arrangement up to a maximum of $7000.00 per plant. The amount of assistance was based on payroll with a $1000.00 grant available for every $30,000.00 of payroll. The funds were used to purchase infrastructure materials aimed at improving fish quality. Insulated fish boxes were the most common item purchased under the program.

Plants that received assistance under the program are as follows:

1. Alberton Fisheries Ltd.
2. Abegweit Seafoods Ltd. / Milligans Fisheries Ltd.
3. Atlantic Mussel Growers Co-op
4. Belle River Enterprises Ltd.
5. Babineau Fisheries Ltd.
6. Beach Point Fishermens Co-op
7. Georgetown Packers Ltd.
8. Howards Cove Seafoods
9. International Seafoods Ltd.
10. Keeping & MacKay Ltd.
11. Malpeque Fishermens Co-op Assn. Ltd.
12. Murray Harbour Seafoods Inc.
13. North Lake Fishermens Co-op
14. North Ocean Enterprises Ltd.
15. North Shore Packing Co. (1984) Ltd.
16. Summerside Sea Products Ltd.
17. Tignish Fishermens Co-op Assn. Ltd.
18. Wendell Graham (1981) Ltd.

Dockside Grading

1987 marked the end of a three year program in which the P.E.I. Department of Fisheries in cooperation with the Department of Fisheries and Oceans funded the P.E.I. Groundfish Buyers to hire graders to monitor the fish grading practices of industry graders. During the 1988 season, most companies on the Island did not actually grade fish, but the vast majority of the participants in the industry continued to use good handling and unloading practices which had become the norm during the previous three year program. These included the use of ice for storage onboard, gutting of fish at sea, and the storage of fish in slush ice.

Late in the fall of this year, the Department was approached by Kingsco Fish Inc. (a company of five Island groundfish plants) to provide a dockside grading team to evaluate the quality of redfish landed by Arctic Trawler Co. Ltd. The Kingsco group had chartered a vessel from Arctic Trawler Co. Ltd. to land a redfish quota allocation they had received through the special gulf program for resource short inshore fish plants.

Since Kingsco. Fish Inc. was a new company and parties in the company had no previous experience in processing redfish, the P.E.I. Department of Fisheries in co-operation with the Department of Fisheries and Oceans provided funds to the P.E.I. Groundfish Buyers (the same group involved in the previous three year grading evaluation) to carry out these evaluations. A success in this venture will mean a great many new jobs and/or longer employment for present plant workers.

As mentioned previously, this project started late in the year and fishing difficulties resulted in small volumes of redfish landings. It is anticipated that this project will continue into the next year and future assessments will determine its success.

Fish Silage

Fish silage is a product made from fish by-products such as groundfish frames, and herring carcasses. These by-products are ground into small particles and formic acid is added at the rate of 3 1/2 % by weight. At this stage, in order to speed up the chemical reaction, the mixture is heated. An enzymatic breakdown, after approximately ten hours, results in a liquid product which has a high nutrient value suitable for animal feed. In 1987, the Department of Agriculture through the P.E.I. Hog Commodity Marketing Board in cooperation with the P.E.I. Department of Fisheries carried out preliminary work, making fish silage from whitefish and feeding it to hogs. This work indicated there was potential for a fish silage industry which could utilize fish waste.

In 1988, the P.E.I. Hog Commodity Marketing Board and the P.E.I. Department of Fisheries established a pilot project with Keeping & MacKay to produce fish silage for feed trials with local farmers.

The Department of Fisheries and the Hog Commodity Marketing Board supplied processing equipment, technical expertise, and manpower to produce the final product. Keeping & MacKay Ltd. supplied the building and raw material. Sixty tonnes of fish silage were processed during the fall of 1988. Feeding trials are underway and preliminary indications suggest that the animals are growing equally well in comparison to conventional feed. This project will continue in 1989.

In Plant Training

The development and implementation of training packages to be used in fish processing plants was continued in 1988. Work was carried out to upgrade and create study lessons for plant workers and management based on actual processing procedures and quality control practices.

Computer terminals were placed in several Island plants and workers were given the opportunity to use the system. The general response to the materials was favorable. The video presentation of computer based training for in-plant workers was developed by Holland College.

In conjunction with personnel form Holland College, the Processing Technician worked closely with the processing industry in an "In Plant Quality Awareness" course. This three week course consisted of an in-depth study of actual processing operations in processing plants and included presentations on quality control and sanitation practices.

An extensive course called "The Fundamentals of Seafood Processing" was conducted by personnel from Holland College in conjunction with C.E.I.C. A training request from the Lennox Island Band Council led to the development of this program.

The "Code of Practice for Trout Processors" manual was introduced to the industry in conjunction with a seminar aimed at those trout growers who intend to process their own product. The seminar was held in March and was attended by a large number of interested trout growers. Practical demonstrations, films and lecture materials were presented.

On-going in plant training was provided to processors and buyers who requested this type of training. Frequent visits to processing establishments resulted in suggestions being made to quality control personnel in regard to good manufacturing practices and regulatory requirements.

FINANCIAL SERVICES AND SPECIAL PROJECTS BRANCH

Donald Judson, Director

The Financial Services and Special Projects Branch provides financial services to various firms and individuals involved in the commercial fishery and special projects that impact on the P.E.I. fishery are prepared and implemented as needed. Current staff includes the Director and one temporary employee, casual employees are utilized as required.

Fish processors, moss harvesters, fishermen and service industries; e.g. boat builders, are assisted in a number of aspects related to financial matters that will lead to the development of their respective enterprises. These aspects include applications for development grants.

Programs currently implemented include the Fishermen's Groundfish Program, Fleet Development Program, and the Fishermans Capital Investment Fund. The Commercial Fishermen's Investment Incentive Program concluded April 1, 1987, but continued to accept certain applications until February 26, 1988. Support is provided to the fish processing sector in preparing financial projections for new developments and financial monitoring was carried out on a number of assistance projects.

The Branch operates as a liaison with the boat building industry on P.E.I. and in the Maritimes and also with the Seaplant harvesting and processing industry.

Special projects during 1988 included the Seaweed Stabilization Program, Basin Head Irish Moss Controlled Harvest Project, and the Seaweed Exploratory Raking Project in Kings County.

The Director also represents the Department on related intra-provincial and Federal/Provincial committees.

Activities undertaken during the twelve months ending December 31, 1988 follow:

Nearshore Fleet Development Program

The Department continues to assess alternate methods of economically and safely landing our traditional share of fisheries resources on P.E.I. One such alternative is the construction of new hatched decked vessels by fishermen who have the required licenses for near shore vessels. A number of hatched decked vessels are now operating in the Gulf Region, owned by P.E.I. fishermen and engaged in the groundfish and crab fisheries.

A policy respecting the level of financial assistance provides Island fishermen with a grant of 25% of the capital cost to a maximum of $20,000 for new near shore vessels over 25 gross registered tons.

Since the inception of the program in 1983, twenty-five fishermen have received assistance in the construction of new hatched deck vessels. These twenty-five vessel owners received a total of $878,374 towards the total capital cost of $4.36 million. Two fishermen received assistance in 1983/84; four in 1984/85; five in 1985/86; six in 1986/87; and, eight in 1987/88. All but one of the vessels constructed to date are less than 45' length overall with the remaining one 55' length overall. Four are of wood construction, two of aluminum and nineteen of fiberglass. As of December 31, 1988, four applications were approved for 1988/89. These were for a 44' aluminum seiner, two 42' fiberglas seiners and a fiberglas crab/longline vessel. The aluminum seiner has been constructed and the three fiberglas vessels are in various stages of construction.

Fishermen's Groundfish Program

Concern over the decline in groundfish landings on P.E.I. led the Department to undertake a comprehensive study of the inshore groundfish fleet. Based on information contained in the study, it was determined that there was a need to assist inshore vessel owners to keep pace with technological changes in groundfish harvesting methods. The Fishermen's Groundfish Program, initiated April 6, 1988, provides conditional grant assistance to inshore vessel owners to purchase a number of capital items related to groundfish harvesting. This program complements the Fleet Development Program administered by the Department to construct new near-shore decked vessels. Financial assistance, by way of conditional grants, is provided to groundfish fishermen at a level of 35% of the capital cost to a maximum of $7,500 per fisherman for eligible items.

As of December 31, 1988, the Department had approved 204 applications for assistance on 336 eligible items for a total of $326,922. Following approval, some fishermen did not proceed and withdrew their applications, while others downscaled their projects by eliminating certain items or purchasing less expensive items.

Total grants paid out and outstanding commitments to December 31, 1988, are $214,623.

Following is a summary of approved conditional grants by eligible item, total capital cost and total conditional grants approved:

Summary - Approved Conditional Grants - 204 Applications

Eligible Items	No. of Items	Total Capital Cost ($)	Total Conditional Grant ($)
Permanent Deck	1	2,000	700
Fishhold	-	-	-
Colour Sounder	119	245,213	85,825
Plotter	50	173,015	60,555
Longline Gear	49	97,130	33,996
Baiter	10	20,905	7,317
Bait Cutter	5	9,900	3,465
Longline Hauler	28	56,290	19,702
Other Longline Gear	7	6,423	2,248
Jigging Reels	2	12,600	4,410
Mobile Gear	20	82,948	29,032
Winch	29	159,066	55,673
Engine	16	299,600	24,000
TOTAL	**336**	**1,165,090**	**326,923**

A total of 94 fishermen have completed their projects during the period April 6, 1988 to December 31, 1988. Following is a summary of Conditional Grant payments made to date.

Summary of Conditional Grant Payments 94 Applications

Items	No. of Items	Total Capital Cost - $	Total Conditional Grant - $
Permanent Deck	-	-	-
Fishhold	-	-	-
Colour Sounder	67	126,858.06	44,400.32
Plotter	14	45,981.00	16,093.35
Longline Gear	11	10,045.97	3,516.09
Baiter	2	3,925.00	1,373.75
Bait Cutter	1	2,400.00	840.00
Longline Hauler	3	3,708.00	1,297.80
Other Longline Gear	1	575.00	201.25
Jigging Reels	1	9,240.00	3,234.00
Mobile Gear	10	33,117.06	11,590.97
Winch	15	68,370.63	23,929.72
Engine	2	44,212.00	3,000.00
TOTAL	**127**	**348,432.72**	**109,477.25**

The average conditional grant to fishermen for the period is $1,164.65 for an average of 1.35 items. The average conditional grant per item is $862.03

A program review was undertaken, among the participating fishermen, to determine the effect of the program . A total of 78 questionnaires were sent to fishermen to obtain their views. 33 of these were completed and returned. This high percentage of returns has provided valuable information to the Department to assist in future program implementation.

Fishermen's Investment Incentive Program

Fishermen had requested, particularly during periods of high interest rates, preferential rates of interest for monies that they must invest directly into their fishing enterprises. For this reason, the Department put the Investment Incentive Program in place. Assistance was provided in the form of up to a four percentage point interest reduction grant paid directly to the fisherman upon receipt from a recognized lending institution of itemized charges related to approved projects. Eligible projects included new or used capital asset purchases, acquisition of fishing enterprises and fishing privileges, repairs to capital items and working capital loans. The interest rebate assistance is paid on an approved loan maximum of $30,000 for a maximum of five years. More than one loan can make up the total aggregate of $30,000.

The program was initiated on May 24, 1983 and having reached its objective of assisting during periods of high interest rates, came to a close April 1, 1987. Approved applications on file continue to be maintained for interest rebate claims for up to five years or until the loan is paid out whichever is the lesser. As well, applications for loan amounts actually drawn down from lending agencies prior to April 1, 1987 were accepted up to February 28, 1988.

Since the inception of the program, 779 applications have been received of which 667 have been approved. During the calendar year to December 31, 1988, 31 applications were received with 18 approved and 13 declined. The following table provides statistical data on program operation by calendar year and program totals to-date:

Calendar Year	# App. Rec'd.	# App. Appv'd	Loan Base Amt. Approved ($)	Average Loan ($)
1983	60	46	397,415.77	8,639.47
1984	155	137	1,898,532.69	13,857.90
1985	193	183	2,913,093.96	15,918.55
1986	196	166	2,604,436.50	15,689.38
1987	144	117	2,025,493.66	17,311.91
1988	31	18	268,551.18	14,919.51
TOTAL	779	667	10,107,523.76	15,153.71

Fishermen's initial claims average one year following loan approval, as the Investment Incentive Program pays claims when the interest payments have been made to the lender. Additional claims are made annually until the loan is retired or the five year maximum is reached. Following are details of claims paid:

Calendar Year	# Claims Paid	Total Paid ($)	Average Claim Payment ($)
1984	98	26,268.33	268.04
1985	223	92,610.17	415.29
1986	368	166,573.20	452.64
1987	399	194,021.90	486.27
1988	426	201,106.85	472.08
TOTAL	1,514	680,580.45	449.52

Fishermans Capital Investment Fund

The Department recognizes that fishermen require large sums of money for fleet acquisitions, purchase of new or used vessels and equipment and upgrading or modernizing capital equipment and that appropriate equity, or down payments are required at time of purchase. The Fishermans Capital Investment Fund was designed to encourage fishermen to invest in savings to allow for the future capital equipment requirements of their fishing enterprises. Initiated on April 1, 1987, the program augments a fishermen's annual $1,000 investment by $150.00. This assistance, accompanied by combined interest on the fishermen's investment and the additional investment by the Department, will assist the fisherman to accumulate a fund for purchase of necessary capital items. The Program provides for bonafide commercial fishermen to invest in the financial institution of their choice, with the Department investing its portion in Provincial Deposit Receipts at the P.E.I. Department of Finance. Fishermen may cash their investments at any time and the portion used for eligible items will form the basis for the Department's contribution.

The Program had experienced limited utilization in 1987 and again in 1988. Two reasons for that limited utilization have been identified. Fishermen have expressed their view that the $1,000 per year is small in relation to costs of larger capital items, such as vessels and engines. Secondly, smaller purchases, e.g. seines and nets, deck equipment and electronics are usually financed with cash or short term financing at the time of purchase. The program is currently under review to determine whether it is an effective method of reaching original program objectives.

Basin Head Irish Moss Harvest

A "giant" Irish Moss (Chondrus crispus) resource located in the river to the East of Basin Head Harbour is a unique strain. This Irish Moss is a large bushy reddish seaplant and grows free floating rather than attached to rock as most found in the outer coast of P.E.I. This strain is high in carrageenan yield and has a high ratio of Kappa to Lambda fraction. The population was estimated in 1977 to have a standing crop of 220,000 pounds wet weight. A biomass estimate in 1987 confirmed this amount and seems to indicate a stable population is maintained. It was felt that this resource could be partially harvested without damage to the population.

A controlled harvest of 52,365 lbs. wet weight was undertaken during Nov. 2 - Nov. 7, 1987. The harvest site was reassessed in September 1988. Natural replacement of the Chondrus crispus resource was taking place in the harvest plot. It was determined that an additional 50,000 lbs. could be withdrawn in the fall of 1988. This project was carried out during the week of September 26 - October 1, 1988. As in 1987, the Department again obtained the requisite scientific collection permits from Fisheries and Oceans - Canada and hired four commercial moss harvesters from the area who used oyster dories with outboard motors and oyster tongs to navigate the shallow water and harvest the moss without disturbing the mud bottom. A total of 47,316 lbs. wet weight was unloaded at the Basin Head Wharf and sold to Acadian Seaplants Ltd., Naufrage, who provided land transportation to their commercial driers. A total of 11,200 lbs. of dry product was obtained. As of December 31, 1988, the dried product had been shipped by Acadian Seaplants Ltd. to an extractor for commercial evaluation.

A total of 99,681 lbs. wet weight was withdrawn from the Estuary during the two years and resulted in 22,938 lbs. of dry giant Irish Moss products. This represents a significant portion of the standing biomass and it is projected that the resource should be left for a period of time to regenerate to allow future harvesting.

Seaweed Exploratory Raking Project

Acadian Seaplants Ltd., who operate the Naufrage buying and drying facilities, proposed a drag raking experiment be carried out off North Lake and Naufrage in 1988 to determine the level of marine plants resources available and what impact drag raking would have on both the plants and lobster stocks in the area. The Department coordinated three meetings with fishermen in North Lake, Naufrage and Morell to discuss interest in these ports. Fishermen in North Lake and Naufrage were in favor of exploratory work while Morell fishermen rejected the idea.

Consequently, a drag raking exploratory project was prepared and funded in cooperation with Fisheries and Oceans, Acadian Seaplants Ltd. and the P.E.I. Department of Fisheries. Two preset areas were designated; west of Campbells Cove Park and in the Goose River/Cable Head East area. Three boats were selected by draw for exploratory raking for three weeks in each of the two areas.

The project at sea was begun on September 10, 1988, with the vessels completing the exploratory work on October 1, 1988. Project monitoring was carried out during the period September 10, 1988 to October 17, 1988, by Fisheries and Oceans.

Findings are currently being assessed with regard to available seaplant biomass in the exploratory areas and to any effects on lobsters.

APPENDIX 1
DEPARTMENT OF FISHERIES
P.E.I. LOBSTER LANDINGS AND VALUES
(1920 - 1988)

V = Values in ($000's)
Q = Quantity in millions lbs.

	Q	V		Q	V
1920	8.3	703.9	1950	9.9	1,963.0
1921	6.4	255.3	1951	8.3	1,702.0
1922	8.8	651.4	1952	8.4	1,849.0
1923	9.7	878.8	1953	7.0	1,997.0
1924	6.5	564.8	1954	7.4	1,977.0
1925	7.9	661.1	1955	8.3	2,324.0
1926	6.6	601.8	1956	9.7	2,725.8
1927	6.3	617.1	1957	8.5	2,456.3
1928	6.6	553.1	1958	8.0	2,510.2
1929	7.4	621.5	1959	8.4	2,843.2
AVG. 20's	7.5	610.9	AVG. 50's	8.3	2,236.8
1930	8.1	539.7	1960	10.1	3,212.3
1931	9.4	553.7	1961	9.5	3,055.0
1932	11.5	551.7	1962	8.7	3,218.9
1933	9.2	396.2	1963	7.4	3,155.8
1934	7.7	536.0	1964	7.8	4,210.8
1935	6.4	467.8	1965	8.8	5,176.6
1936	6.0	544.4	1966	7.9	3,925.7
1937	5.8	524.8	1967	9.0	5,228.8
1938	7.1	458.8	1968	8.7	5,328.9
1939	7.0	464.4	1969	8.2	5,375.8
AVG. 30's	7.8	503.8	AVG. 60's	8.6	4,188.9
1940	5.6	353.9	1970	8.7	6,231.2
1941	6.0	469.2	1971	8.2	5,860.6
1942	6.4	694.8	1972	7.3	6,360.8
1943	6.0	999.9	1973	7.7	7,503.2
1944	6.6	1,149.7	1974	6.2	6,347.0
1945	8.1	1,503.6	1975	8.6	8,135.5
1946	7.9	1,982.7	1976	8.5	8,510.5
1947	6.2	1,070.0	1977	9.1	10,012.0
1948	6.5	1,411.9	1978	11.1	16,648.6
1949	6.8	1,388.4	1979	11.8	18,073.9
AVG. 40's	6.6	1,102.4	AVG. 70's	8.7	9,368.3
1980	11.8	15,458.0	1984	13.6	23,137.0
1981	11.9	18,519.0	1985	15.0	33,591.0
1982	12.2	22,599.0	1986	18.3	44,494.2
1983	15.5	29,056.1	1987	18.9	49,532.0
			1988	22.4	56,128.9

APPENDIX 2

GENERAL FISHERIES FACTS
1988

P.E.I. Fishermen and Helpers (approx.)	4,771
Bonafide Fishermen*	1,385
Commercial Fishermen**	3,386
Vessels - Inshore (<55')	1,443
- Offshore (>55')	5

Licenses by Species:

Groundfish	931
Herring	865
Mackerel	822
Tuna	361
Scallops	398
Lobster	1,309
Eels	269
Silversides	32
Smelts	419
Snow Crab	16
Oysters	1,102

Employees in Processing Plants (Maximum)	2,400
Provincially Licensed and Federally Registered Export Plants	34
Provincially Licensed Non-Export Plants	16
Major Shellfish Shippers	12
Trout Growers	30

*__Bonafide Fisherman__ is a fisherman that is registered as a commercial fisherman, and is the holder of a limited fishery license, and as well meets one of the following conditions:

(1) is the holder of a Category A lobster license;

(2) is able to show proof that 75 percent or more of his income was derived from his previous year's fishing; or

(3) can show proof of sales of fish of a landed value in excess of $15,000.

** __Commercial Fisherman__ is a person 16 years or older that has participated in commercial fisheries and is registered with the Department of Fisheries and Oceans as a Commercial Fisherman. Commercial Fishermen are categorized as A) bonafide, B) full-time, or C) part-time.

ORGANIZATIONAL CHART